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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/672,987 | 09/25/2003 | Jui Yang Chang | 4089SF | 9769 |
| 7590 | 05/04/2004 | | EXAMINER | |
| Jui Yan CHANG | | | YAO, SAMCHUAN CUA | |
| P.O.Box 63-298 | | | ART UNIT | PAPER NUMBER |
| Taichung, 406 | | | | |
| TAIWAN | | | 1733 | |

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/672,987 | CHANG, JUI YANG | |
| | Examiner | Art Unit | |
| | Sam Chuan C. Yao | 1733 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 September 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-6 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-6 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. ____.
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). Air in the atmosphere is composed of nitrogen gas (about 79% by weight), oxygen gas (about 20% by weight) and various inert gases (about 1% by weight). The term "air" in claim 3 is used by the claim to mean "carbon dioxide, propane or butane" is repugnant to its ordinary meaning, thereby rendering this claim indefinite.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Esakov et al (US 3,930,917).

6. Claims 4-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Esakov et al (US 3,930,917) as to claim 1 above.

With respect to claims 4-5, although not explicitly disclosed, the co-extruded sheet must be inherently cooled at least under ambient condition. In any event, it would have been an obvious expediency in the art to subject the co-extruded sheet to a cooling operation in order to accelerate the hardening of the co-extruded sheet. After the co-extruded sheet hardened, the extruded sheet must be inherently cut to a suitable dimension. In any event, it would have been obvious in the art to cut a extruded layers are cut into a suitable dimension for a desired end-used of the extruded layers.

With respect to claim 6, in order to form a foamable material, a blowing agent must inherently be incorporated in a thermoplastic material disclosed by Esakov et al. In any event, such would have been obvious in the art as such is conventional in the art.

7. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dukess (US 4,107,247).

With respect to claim 1, the recited squeezing step in claim 1 reads on the co-extrusion process taught by Dukess. As heat-melted thermoplastic skin layers (A,B) and a heated foamable core layer are extruded out of an extrusion die, since the three layers are squeezed through the extrusion die to form a multi-layered co-extruded sheet (i.e. board).

With respect to claims 4-5, although not explicitly disclosed, the co-extruded sheet must be inherently cooled at least under ambient condition. In any event, it would have been an obvious expediency in the art to subject the co-extruded sheet to a cooling operation in order to accelerate the hardening of the co-extruded sheet. After the co-extruded sheet hardened, the extruded sheet must be inherently cut to a suitable dimension. In any event, it would have been obvious in the art to cut a extruded layers are cut into a suitable dimension for a desired end-used of the extruded layers.

With respect to claim 6, see claim 1 of the patent.

8. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Eslinger et al (US 4,221,624) for essentially the same reasons set forth in numbered paragraph 7 above.

9. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esakov et al (3,930,917), Dukess (US 4,107,247) or Eslinger et al (US 4,211,624) as

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applied to claim 1 above, and further in view of either Ishiwatari et al (US 5,958,164) or Reedy et al (US 5,302,624).

It would have been obvious in the art to inject gases such as carbon dioxide or butane to a foamable core layer before the layers are extruded through an extrusion die such as is notoriously well known in the art as exemplified in the teachings of Ishiwatari et al (abstract; col. 9 lines 13-21; col. 14 lines 5-13) or Reedy et al (abstract; col. 2 lines 55-63).

It is worthnoting that: Ishiwatari et al teaches cutting laminated foamed/film article to a desired dimension (figure 3).

Conclusion

Laurent et al (US 6,132,539), Lindemann et al (US 5,462,794) and Ives (US 4,504,338) are cited as references of interest showing a multi-layer article having a foam core layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

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04-30-04